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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO.      | CONFIRMATION NO. |
|---|-------------|-----------------------|--------------------------|------------------|
| 09/988,376  | 11/19/2001  | Byron Scott Derringer | 54080-00601              | 8359             |
| 22852   | 7590        | 12/13/2005            |                          | EXAMINER         |
| FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER<br>LLP<br>901 NEW YORK AVENUE, NW<br>WASHINGTON, DC 20001-4413 |             |                       | TWEEL JR, JOHN ALEXANDER |                  |
|   |             |                       | ART UNIT                 | PAPER NUMBER     |
|   |             |                       | 2636                     |                  |

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                |                        |  |
|------------------------------|--------------------------------|------------------------|--|
| <b>Office Action Summary</b> | Application No.                | Applicant(s)           |  |
|                              | 09/988,376                     | DERRINGER, BYRON SCOTT |  |
|                              | Examiner<br>John A. Tweel, Jr. | Art Unit<br>2636       |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 06 October 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 44-55 and 83-107 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 44-55 and 83-107 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

1. Claims 44, 46, 47, 49, 83, 85, 86, and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jain** [U.S. 5,629,691] in view of **Byrne** [U.S. 5,554,972].

For claim 44, the apparatus for detecting objects on an airport runway taught by **Jain** includes the following claimed subject matter, as noted, 1) the claimed plurality of receivers is met by the radar sensor units (No. 13) positioned along one side of the runway, wherein the units are adapted to indicate a first indication if an object is detected on the runway, 2) the claimed processor is met by the CPU (No. 16) wherein the CPU is adapted to send a second indication in response to the first indication, and 3) the claimed user interface is met by the display (No. 17) linked to the processor wherein the display is adapted to enable the user to receive a third indication in response to the second indication. However, there is no plurality of transmitters adapted to emit incident beams and positioned along a first side of the runway for reception by said plurality of receivers.

The electronic perimeter warning system taught by **Byrne** teaches another method to detect intrusion from unauthorized or other objects. As seen in Fig. 1, a signal transmitter (No. 9) is positioned at one end of a protected perimeter while a signal receiver (No. 23) is positioned at an opposite end to create a perimeter “line” in which people and workers may not cross for their own safety. One obvious advantage of this system is its simplicity and also its non-reliance on extra transponder systems such as the one in the primary reference (Jain, No. 22). The Byrne system is also portable, lightweight, and flexible in the distances it is intended to protect.

Both reference pertain to possible unauthorized intrusion in a dangerous area. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a plurality of transmitters adapted to emit incident beams positioned along a first side of the runway of **Jain** for the purpose of introducing a perimeter intrusion alarm that is portable, simple, and flexible in the distances it is intended to protect.

For claim 46, the transmitter and receiver found in **Byrne** forms a transceiver.

For claim 47, Figure 2 of **Byrne** comprises a support mechanism (No. 26) adapted to support the receiver.

For claim 49, Figure 3 of **Byrne** comprises a support mechanism adapted to support the transmitter.

For claim 83, the apparatus for detecting objects on a runway taught by **Jain** includes the following claimed subject matter, as noted, 1) the claimed plurality of receivers is met by the radar sensor units (No. 13) positioned along one side of the runway, wherein the units are adapted to indicate a first indication if an object is detected on the runway, 2) the claimed processor is met by the CPU (No. 16) wherein the CPU is adapted to send a second indication in response to the first indication, and 3) the claimed user interface is met by the display (No. 17) linked to the processor wherein the display is adapted to enable the user to receive a third indication in response to the second indication. However, there is no plurality of transmitters adapted to emit incident beams and positioned along a first side of the runway for reception by said plurality of receivers.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 44 above.

For claim 85, the transmitter and receiver found in Byrne forms a transceiver.

For claim 86, Figure 2 of Byrne comprises a support mechanism (No. 26) adapted to support the receiver.

For claim 88, Figure 3 of Byrne comprises a support mechanism adapted to support the transmitter.

2. Claims 45 and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jain** in view of **Byrne** as applied to claim 44 above, and further in view of **Kato et al** [U.S. 5,508,697].

For claim 45, the combination of references above includes the claimed subject matter as discussed in the rejection of claim 44 above. However, there is no mention of a reflector positioned adjacent the runway.

Reflected beams have been used to detect matter on runways for some time. The airplane detection system taught by Kato includes a receiver (No. 7) that detects waves reflected by the fuselage of an airplane transmitted by a transmitter (No. 3). This is obvious evidence that reflectors have been used in runways for some time and also does no damage to the runway itself. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a reflector in the system above for the purpose of taking advantage of a well known transmission system that does no damage to the runway.

For claim 84, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 45 above.

3. Claims 48, 50, 87, and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jain** in view of **Byrne** as applied to claim 44 above, and further in view of **Reinert, Sr.** [U.S. 6,033,083].

For claim 48, the combination of references above includes the claimed subject matter as discussed in the rejection of claim 44 above. However, there is no mention of presenting the support mechanism as a flush surface.

The airport runway light support apparatus taught by **Reinert, Sr.** includes a lighting mechanism that is embedded in the ground as seen in Figure 11. The obvious advantage of this configuration is to prevent the support mechanism from being exposed to the elements, thereby elongating the operable life of the system. As the primary reference pertain to optical mounting transceivers, it would have been obvious to one of ordinary skill in the art at the time the invention was made to support the receiver in a substantially flush surface for the purpose of elongating the life of the system by preventing exposure to the elements.

For claim 50, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 48 above.

For claims 87 and 89, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claims 48 and 50 above.

4. Claims 51-54 and 90-93 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jain** in view of **Byrne** as applied to claim 44 above, and further in view of **O'Meara**.

For claims 51-54, the combination of references includes the claimed subject matter as discussed above. However, there is no mention of a cover or heating element for the transmitter or receiver.

The laser lighting system taught by **O'Meara** includes an optical system that assists in locating markers for navigation. One embodiment shown in Figure 28 includes a heated glass cover for clearing frost and ice from the surface of the optical system so that operation of the optical system is not impaired.

The **O'Meara** reference is plain evidence that optical systems have used heating to clear the optical channels for proper operation. The primary reference is to be used outdoors where such weather conditions may be experienced. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include heating means in the optical system of **Byrne** for the purpose of insuring proper operation in inclement weather.

For claims 90-93, the claims are interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claims 53 and 54 above.

5. Claims 55 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jain** in view of **Byrne** as applied to claim 44 above, and further in view of **Bass** [U.S. 5,375,058].

For claim 55, the combination of references above includes the claimed subject matter as discussed in the rejections above. However, although there are multiple detectors in the system of Byrne, there is no mention of triangulation to locate an object on a runway.

The surface detection system of **Bass** uses triangulation from at least one scanner to detect the position of an airplane on a runway. This reference is plain evidence that triangulation has been used for some time on runways and to detect objects thereon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use triangulation in the combination of references above for the purpose of using such a well-known and common computation configuration.

For claim 94, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 55 above.

6. Claims 95-107 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for detecting objects using a transmitter and receiver on a runway, does not reasonably provide enablement for informing the user of a type of object located on a runway. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

As stated in a prior Office action, the vast majority of the specification details the location of transmitters and receivers in relation to an airport runway. Nowhere is there any mention of exactly how the system determines the type of object on the runway.

There is a lot of well meaning description in the Summary of how the system can determine and differentiate between debris and "other objects". The closest the specification comes is whether the object is moving or stationary, and even then the detailed description is not forthcoming in exactly how that is done. Can it differentiate between vehicles and animals? Garbage or humans? And if so, how? It is understood that the transmitters and receivers can detect the presence or absence of an object, but the Examiner is still confused as to how this "item characterizer" is supposed to work.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Levine** [U.S. 3,971,025] is a system for detecting and monitoring aircraft and other vehicles on an airport surface.

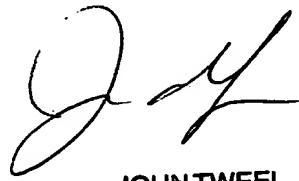
**Michelotti** [U.S. 4,481,516] has warning devices for the safety of aircraft taxiing.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Tweel, Jr. whose telephone number is 571 272 2969. The examiner can normally be reached on M-F 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass can be reached on 571 272 2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAT  
12/10/05



JOHN TWEEL  
PRIMARY EXAMINER